

THE SPECTROPHOTOMETER OF THE NATIONAL OBSERVATORY

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A spectrometer able to work with the 60 in. (f/10) or 24 in. (f/12,5) telescope of the Brazilian Astrophysical Observatory was developed by the Department of Astronomy of the ON. The instrument has an off-set guiding module including a Ne lamp for wavelength calibration: a monochromator with a concave holographic grating giving a dispersion of 40 Å/mm at the exit slot and a Ga-As (RCA 31034) cooled photomultiplier as a receptor. The output of the P.M. is amplified and discriminated by a standard EGG-1120 amplifier and measured by a EGG 1112 photon-counter. Control of the wavelength position, integration time, photon-counter operation, data acquisition, graphic display and printing of the scans are made through a 48 k micro-computer with two 5-1/4 disc-drivers.

The working resolution are 4.8, 20, 40 or 80 Å obtained through interchangeable slots on the monochromator. A set of consecutive measurements separated by a predefined shift (minimum 1 Å) and a common integration time constitute a given sequence. Each scan can include a number of predefined sequences, each one determined by the initial wavelength, the shift, the number of measurement and the integration time. The sources to be observed can be programmed before each observational run specifying the object identification, parameters of each sequence and number of scans for each object to be measured in the night. During the observation the video monitor shows the central wavelength of the band in which the measurement is being made, the initial and final wavelength of the sequence, integration time and other parameters of the scan.

Observation of spectrophotometric standards with different air masses allow the reduction for atmospheric extinction and overall sensibility of the system at the end of the night. Object and sky data are recorded on 5-1/4 discs and can be printed at the end of the night.

In a definite version, to be completed in the first semester of 1985, the instrument will operate with automatic subtraction of the sky through a mechanical chopper at 1 kHz. It will incorporate also a polarimetric analyzer module allowing measurement of the Stokes parameters.

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